

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO THE
THIRTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Lawrence Kaufmann, Consultant (PBR)

AG-13-6 Referring to page 16 and 17 of Mr. Kaufmann's prefiled testimony, please provide a complete and detailed description of all of the differences between the Company's proposed Index-Based Pricing Restrictions in this case and those which were approved by the Department for Boston Gas Company in D.T.E. 03-40.

Response: There are no differences between Bay State's proposed index-based pricing restrictions and those approved by the Department for Boston Gas in D.T.E. 03-40.

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Date: June 22, 2005

Responsible: Lawrence Kaufmann, Consultant (PBR)

AG-13-7 Referring to page 17 and 18 of Mr. Kaufmann's prefiled testimony, please provide a complete and detailed description of all of the differences between the Company's proposed Earnings Sharing Mechanism in this case and that which was approved by the Department for Boston Gas Company in D.T.E. 03-40.

Response: The only difference between Bay State's proposed earnings sharing mechanism and that approved by the Department for Boston Gas in D.T.E. 03-40 is that any maintenance cost savings resulting from the replacement from eligible bare steel facilities will be separately tracked and returned to customers in the steel infrastructure replacement mechanism. The regulatory treatment of these cost savings is explained in the Bryant and Ferro Testimonies (Exh. BSG/SHB-1 and Exh. BSG/JAF-1).

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Responsible: Lawrence Kaufmann, Consultant (PBR)

AG-13-10 Referring to Mr. Kaufmann's O&M Benchmarking study, page 7, please indicate whether he had "quality" data for each of the 43 gas distribution companies for each of the years 1994 through 2003.

Response: We generally had quality data for each of the 43 distributors for each of the years 1994 through 2003. Of the 430 observations in our panel data set (43 companies over 10 years), 14 observations were excluded because of data errors. We also imputed four data values that were missing. Each of these "Imputations and Exclusions" is presented below.

Imputations

Company	Year	Data Missing	Imputation Method
Peoples Nat Gas	2002 & 2003	payroll	Growth In non-fuel O&M
PG Energy	2002 & 2003	payroll	Growth In non-fuel O&M
Brooklyn Union	2003	payroll	Growth In non-fuel O&M
Brooklyn Union	2003	taxes	Used previous year value

Exclusions

Company	Year	Reason Data Excluded
Interstate Power	2002	Merger, large jump in reported data
Interstate Power	2003	Merger, large jump in reported data
Providence Gas	2002	Merger, large jump in reported data
Providence Gas	2003	Merger, large jump in reported data
Southwest Gas	2001	O&M allocation issues between CA and NV
Southwest Gas	2002	O&M allocation issues between CA and NV
Southwest Gas	2003	Missing O&M data
People's Gas Light	1994	Decline in customer numbers from 10 years earlier
People's Gas Light	1995	Decline in customer numbers from 10 years earlier

People's Gas Light	1996	Decline in customer numbers from 10 years earlier
People's Gas Light	1997	Decline in customer numbers from 10 years earlier
People's Gas Light	1998	Decline in customer numbers from 10 years earlier
People's Gas Light	2003	Decline in customer numbers from 10 years earlier
Illinois Power	2003	Decline in customer numbers from 10 years earlier

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Responsible: Lawrence Kaufmann, Consultant (PBR)

AG-13-11 Referring to Mr. Kaufmann's O&M Benchmarking study, page 7, please indicate whether he had data for any other gas distribution companies for each of the years 1994 through 2003, but did not include them because some or all of the data was not "quality" data. If so, please identify each of those companies and provide all data for each of those companies for each of the years 1994 through 2003.

Response: I had access to data for other gas distribution companies for the years 1994 through 2003, but I did not include them in the sample because the study was designed to be consistent with the econometric study presented for Boston Gas in DTE 03-40, with any refinements limited to addressing concerns expressed by the Department in DTE 03-40. The econometric study in DTE 03-40 included 42 gas distributors; the only distributor added to the sample for the Bay State study was Bay State itself, which was obviously necessary to evaluate the Company's O&M cost performance. The Department did not express any concerns about the sample used in the econometric study presented in DTE 03-40, and the composition of this sample was not a significant issue in any case in the proceeding.

However, the Attorney General in DTE 03-40 did raise issues about the representativeness of the sample used to estimate total factor productivity (TFP) trends for the Northeast gas distribution industry. The Department rejected the Attorney General's claim that the sample used to estimate TFP trends was not representative, concluding that "Boston Gas selected a sample that, given data limitations, balanced the objectives of comprehensiveness, heterogeneity, and cost" (DTE 03-40 at 475). I provided a detailed explanation on how the sample balanced these three objectives in the Rebuttal Testimony I submitted in DTE 03-40. This rationale is equally valid for the national sample used to estimate the econometric model, and the explanation presented in my DTE 03-40 Rebuttal testimony would have extended to the national sample if that had been a significant issue in the proceeding. A copy of my Rebuttal Testimony in DTE 03-40 was provided in response to AG-13-2.

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Responsible: Lawrence Kaufmann, Consultant (PBR)

AG-13-12 Please provide a list of all distribution companies Mr. Kaufmann rejected from consideration.

Response: Please see the response to AG-13-11.

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Date: June 22, 2005

Responsible: Lawrence Kaufmann, Consultant (PBR)

AG-13-14 Referring to Mr. Kaufmann's O&M Benchmarking study, page 15, please provide complete copies of the "previous economic studies that have found that Northeast operations are associated with higher costs, even after controlling for factors like higher input prices."

Response: There are two such studies. One was prepared by Professor Ernst Berndt and was filed by Boston Gas Company in D.P.U. 96-50. A copy of this study is provided as Attachment AG-13-14. The second was prepared by Pacific Economics Group and submitted as part of my testimony for Boston Gas in D.T.E. 03-40. A copy of this study is provided in response to AG-13-2.

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Responsible: Lawrence Kaufmann, Consultant (PBR)

AG-13-15 Referring to Mr. Kaufmann's O&M Benchmarking study, page 15, please provide any economic studies that have found that Northeast operations are associated with higher costs, after controlling for the percentage of distribution main made of cast iron or bare steel.

Response: Please see the filed response to AG-13-2.

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Responsible: Lawrence Kaufmann, Consultant (PBR)

AG-13-16 Please provide the exact equation that was derived from Mr. Kaufmann's O&M Benchmarking analysis and used to determine Bay State Gas Company's predicted O&M costs.

Response: The exact equation is presented below:

$$\begin{aligned} \ln\left(\frac{O \& M Cost}{wm}\right)^{BayState} &= 6.861 + 0.571 * \ln\left(\frac{wl}{wm} / \frac{wl}{wm}\right)^{BayState} + 0.494 * \ln(Y1/\overline{Y1})^{BayState} \\ &+ 0.118 * \ln(Y2/\overline{Y2})^{BayState} - 0.203 * \left(\ln\left(\frac{wl}{wm} / \frac{wl}{wm}\right) * \ln\left(\frac{wl}{wm} / \frac{wl}{wm}\right)\right)^{BayState} \\ &- 0.092 * (\ln(Y1/\overline{Y1}) * \ln(Y1/\overline{Y1}))^{BayState} - 0.054 * (\ln(Y2/\overline{Y2}) * \ln(Y2/\overline{Y2}))^{BayState} \\ &+ 0.098 * (\ln(Y1/\overline{Y1}) * \ln(Y2/\overline{Y2}))^{BayState} - 0.044 * \left(\ln\left(\frac{wl}{wm} / \frac{wl}{wm}\right) * \ln(Y1/\overline{Y1})\right)^{BayState} \\ &+ 0.024 * \left(\ln\left(\frac{wl}{wm} / \frac{wl}{wm}\right) * \ln(Y2/\overline{Y2})\right)^{BayState} - 0.380 * \ln(Z1/\overline{Z1})^{BayState} - 0.012 * \ln(Z2/\overline{Z2})^{BayState} \\ &+ 0.078 * \ln(Z3/\overline{Z3})^{BayState} + 0.267 * \ln(Z4/\overline{Z4})^{BayState} - 0.106 * \ln(Z5/\overline{Z5})^{BayState} - 0.013 * trend \end{aligned}$$

In this equation, all variables with bars above them are sample mean/average values. These values are included in this expression because the econometric equation is estimated using "mean-scaled" data. Therefore for each variable listed above, the exact values that are used to determine Bay State's predicted costs are equal to the value of that variable for Bay State divided by the sample mean value for that variable.

The variables above are:

- 1) wm is the price of non-labor O&M inputs
- 2) wl is the price of labor inputs
- 3) Y1 is the number of customers
- 4) Y2 is total throughput
- 5) Z1 is the percent of distribution main that is not comprised of cast iron or bare steel
- 6) Z2 is the number of electric customers

- 7) Z3 a Northeast dummy variable
- 8) Z4 is total miles of distribution main
- 9) Z5 is the system growth proxy
- 10) trend is a time trend variable

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Responsible: Danny G. Cote, General Manager

AG-14-1 Refer to the Company's responses to AG-2-35(c) and AG-2-39, which show a sharp reduction in the replacement of bare steel mains in the Brockton Service area from 1998 to 2002, the same area in the Company's service territories that is now experiencing the accelerating leak rate. Explain why the Company permitted the replacement of bare steel mains in the Brockton area to decline at the same time leak rates in this area were increasing.

Response: The chart in AG-2-35(c) indicates the dollars used to replace bare steel pipe and appears to have declined in the years 1998- 2002. However, a better representation of the company's replacement efforts is measured in miles. The miles replaced in the Brockton operating area are shown below in Chart AG-14-1. Chart AG-14-1 illustrates the replacement since 1985 with the average miles replaced of 8.9 miles per year. The average mileage between 1998 and 2002 is 8.6, which is very close to the 18-year average. Also, while not shown, there was a significant increase in bare steel replacement in 2004 from the previous years (15 miles) and the Company is currently in the process of replacing significantly more in 2005.

CHART AG-14-1

Brockton Operating Area

Year	Unprotected Bare Steel (miles)	Mileage Replaced
		(per year)
1985	480	-
1986	470	10
1987	463	7
1988	453	10
1989	447	6
1990	437	10
1991	429	8
1992	419	10
1993	412	7
1994	404	8
1995	389	15
1996	378	11

Average Annual Bare Steel Replaced	
(miles / year)	(time period)
8.6	1998-2002
8.9	1986-2003

1997	370	8
1998	357	13
1999	346	11
2000	338	8
2001	331	7
2002	327	4
2003	320	7

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Responsible: Danny G. Cote, General Manager

AG-14-6 Produce all documents, including but not limited to reports, letters, memorandums and e-mails to, from and by Edward Collins concerning the Company's Steel Infrastructure Replacement program.

Response: Mr. Collins has not sent, received or authored any documents pertaining to the Company's Steel Infrastructure Replacement program. Mr. Collins prepares and submits the RSPA DOT F7100.1-1 report annually to state and federal regulatory agencies. Copies of these are provided in the Company's response to AG 6-8.

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Responsible: Danny G. Cote, General Manager

AG-14-7 Produce and organize by category of document type all documents, including but not limited to reports, letters, memorandums and e-mails to, from and by Edward Collins concerning leaks in Company's distribution system from 1995 to 2005.

Response: Mr. Collins has not sent, received or authored any documents concerning leaks in the Company's distribution system. Mr. Collins prepares and submits the RSPA DOT F7100.1-1 report annually to state and federal regulatory agencies, which were provided in response to AG 6-8.

It is important to understand that Bay State does not create a great number of written documentation about leaks because leak repairs are very much a day-to-day operational event. The typical "life" cycle sequence of leak detection, repair, and reporting is detailed as follows:

- A leak is found (either as a result of ongoing leakage surveys or from an odor complaint) and classified. If the leak is classified as a type 1 or type 2 leak, a leak repair order is printed and created in the WOMs system. If the leak is classified as a type 3 it is captured in WOMs system or captured in a manual class 3-leak file.
- If the leak is a type 1 leak, it is immediately repaired and the repair information is enter in the WOMS system. If it is a type 2 leak, it is scheduled then repaired; the repair information is entered into the WOMs system.
- During the monthly staff meetings, area managers report on the number of outstanding class 2 leaks open in their systems. (See Attachment AG-14-08).
- The leak information is extracted annually for filing in the DOT 7100 reports and the Bay State historic mains and services spreadsheet is updated.
- The DOT 7100 reports and Bay State historic mains and services spreadsheet are then reviewed in detail by Bay State operations management to evaluate system performance and to identify future system needs.

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Responsible: Danny G. Cote, General Manager

AG-14-8 Produce and organize by category of document type all documents, including but not limited to reports, letters, memorandums and e-mails to, from and by Edward Collins concerning corrosion in Company's distribution system from 1995 to 2005.

Response: Other than the DOT data and spreadsheets previously submitted, Mr. Collins does not prepare reports, letters, memorandums or e-mails related to corrosion leakage.

By way of explanation, Bay State does not create a great number of reports or memos because leak repairs are very much a day-to-day operational event. The typical "life" cycle sequence of leak detection, repair, and reporting is detailed as follows:

- A leak is found (either as a result of ongoing leakage surveys or from an odor complaint) and classified. If the leak is classified as a type 1 or type 2 leak, a leak repair order is printed and created in the WOMs system. If the leak is classified as a type 3 it is captured in WOMs system or captured in a manual class 3-leak file.
- If the leak is a type 1 leak, it is immediately repaired and the repair information is entered in the WOMS system. If it is a type 2 leak, it is scheduled then repaired; the repair information is entered into the WOMs system.
- During the monthly staff meetings, area managers report on the number of outstanding class 2 leaks open in their systems. (See Attachment AG-14-08).
- The leak information is extracted annually for filing in the DOT 7100 reports and the Bay State historic mains and services spreadsheet is updated.
- The DOT 7100 reports and Bay State historic mains and services spreadsheet are then reviewed in detail by Bay State operations management to evaluate system performance and to identify future system needs.

Operations Staff Meeting Notes

May 18, 2005

Monthly Operations Updates – Dan Cote

- Status of Class II Leaks, Surveys, Corrosion, Capital Construction & Other Operating Issues
 - Bill St. Cyr (Brockton) – 25-30 Class II's; Surveys couple of weeks behind; Corrosion on schedule.
 - Pam Bellino (Springfield) – 33 Class II's, Service surveys ongoing—completed by end of September; Corrosion completed; 11 of 16 projects completed.
 - John DaSilva (Portsmouth) – 7 Class II's; mobile on track; Corrosion in place.
 - Mike Laghetto (Lawrence) – 12 Class II's; Surveys ahead of schedule; Corrosion on schedule; municipal projects underway.
 - Paul Rogosinski (Portland) – 15 Class II's' Surveys on schedule; Lewiston - ongoing issue.
 - Don Merriam (Corrosion/Leaks/Facilities) – All in good shape. Mobile survey is ongoing at all locations.
 - Dana Argo (Systems Operations) – Bliss Street up and running. Lewiston project under way.

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Responsible: Danny G. Cote, General Manager

AG-14-9 Has the Company ever had a corrosion study of any type performed on its distribution system? If "yes," please produce a copy of that study or studies, along with all work papers, calculations and assumptions.

Response: Bay State Gas uses outside contractors to do all of its annual corrosion surveys. One of the services the contractor provides is to troubleshoot any problems the Company may encounter. With this service provided to Bay State, Bay State has not determined it necessary to do a comprehensive corrosion study of the entire distribution system. Bay State's surveys exceed both regulatory requirements and typical industry practice and have allowed the Company to continuously operate an effective and efficient system.

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Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-14-10 Has the Company ever had a leak study of any type performed on its distribution system? If yes, please produce a copy of that study or studies, all with all work papers, calculations and assumptions.

Response: Please see Bay State's response to AG-14-9. With continuous leak survey information provided to the Company by its outside leak survey contractors, Bay State has not deemed it necessary to commission or conduct a comprehensive leak study of the entire distribution system. Bay State's leak surveys exceed both regulatory requirements and typical industry practice and allow the Company to operate an effective and efficient system.

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Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-14-11 Has the Company ever contracted a corrosion or leak consultant (either a third party or employee of an affiliate with the appropriate expertise) regarding its distribution system? If "yes", identify the consultant or affiliate employee and produce all documents, including but not limited to reports, letters, memorandums and e-mails to, from and by the consultant or employee of an affiliate concerning the Company's distribution system.

Response: Bay State Gas uses outside contractors to do all of its annual leak and corrosion surveys. One of the services the leak and corrosion survey contractors provide is to troubleshoot any problems that may arise. To the best of Bay State's knowledge and following a reasonable inquiry, it is my belief that because Bay State conducts continuous leak surveys, it has not found the need to contract outside consultants for additional expertise regarding corrosion or leaks in the Bay State distribution system. (See AG-2-16(b)). Bay State's surveys exceed both regulatory requirements and typical industry practice and have allowed it to operate and maintain an effective and efficient system. The data associated with Bay State's corrosion and leak survey results is available for review at each of Bay State's operational centers.

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Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-14-13 Has the Company ever performed any analyses or review of the causes of leaks to its distribution system? If "yes", produce and organize by category of document type all documents related to the analyses or review.

Response: The Company reviews the causes of leaks to its distribution system each year. The review takes place each year during the first quarter of the calendar year. The review consists of reviewing the data to be submitted to the DOT on the RSPA F7100.1-1 annual report to DOT and the DTE to validate the reasonableness of the data. Historically, roughly 40 percent of all gas main leaks repaired or eliminated is due to corrosion.

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Responsible: Danny G. Cote, General Manager

AG-14-14 Refer to the Company's response to AG-2-16(a), p. 9 of 23. Is the Company aware of root cause of its increasing corrosion leak rate in the Brockton service area? If "yes", explain the root cause of the increasing corrosion leak rate. Identify and produce all reports, analyses, memos or other documents that address the cause of the increasing leak rate.

Response: The determination of a root cause for the increasing corrosion leak rate in the Brockton service area is a complex matter. Bay State does not believe that there is a single cause. However, industry-specific and operational experience suggests that the age, size and pressure of the pipe are likely key factors. Age is important because these bare steel pipes have been in the ground for a longer period of time. Wall thickness is a factor because smaller diameter pipes have a thinner wall thickness and therefore will generally develop a corrosion leak sooner than a larger diameter main with a corresponding thicker wall thickness. Furthermore, once a pinhole leak develops, the fact that many of the mains in Brockton are operating as a 100 psi system, the gas leak will be detected sooner because of the larger volume of gas escaping from the pinhole, compared to if the leak was on a low pressure main. After review of its files, Bay State is unable to produce any internal reports, analyses, memos or other documents that specifically or generally address the increasing leak rate causes.

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Date: June 21, 2005

Responsible: Danny G. Cote, General Manager

AG-14-21 Refer to the Company's June 3, 2005, letter on the status of discovery responses to the Department with the Company's response to DTE 3-11(a) and (e). In the letter the Company claimed it does not differentiate causes of pipe leaks("Bay State does mark leaks on its maps. To the extent a leak occurs on a steel pipe, it is assumed, based on Bay State's operational experience, that the cause is corrosion."), yet it reports six different types of leaks on its annual DOT reports. Explain how if the Company does not distinguish different types of leaks on its maps, it can accurately report different types of leaks to the DOT.

Response: In the Company response to DTE 3-11(a) through (e), the Company provided copies of its DOT annual reports (Form RSPA F7100.1-1) for calendar years 2000 to 2004. Part C of the DOT annual report requires the operator to state the cause of each gas main and gas service leak eliminated or repaired during the calendar year. The cause of each gas main and service leak is captured in the Company's Work Order Management System (WOMS). Reports generated from the WOMS are used to categorize and summarize the cause and number of leaks repaired or eliminated that are reported on the DOT annual report. Prior to 2004, the Company categorized the cause of leaks repaired or eliminated as follows: corrosion, third party, outside force, construction defect, material defect and other. Beginning in 2004, DOT modified the reporting requirements on Form RSPA F7100.1-1. There are now eight cause of leak repaired or eliminated categories as follows: corrosion, natural forces, excavation, other outside damage force, materials or welds, equipment, operations and other. Past and present definitions of each category are provided on the DOT website at the following URLs:

http://ops.dot.gov/library/forms/gasd/distr_ann_instructionsrevised.pdf

[http://ops.dot.gov/library/forms/gasd/Gas_D_Annual_Instructions\(7100_1-1\).pdf](http://ops.dot.gov/library/forms/gasd/Gas_D_Annual_Instructions(7100_1-1).pdf)

The Company maintains leak progression maps. These maps provide a graphical representation of the approximate location of the leak repairs made due to corrosion. By DOT's definition, a leak resulting from a hole in the pipe or other component caused by galvanic, bacterial, chemical, stray current, or other corrosive action is a corrosion leak. The leak progression maps do not show the location of leaks repaired due to other

causes such as third party damage. The maps provide an alternate way of portraying tabular leak repair data provided by the WOMS. Although the Company does differentiate causes of pipe leaks, the Company does not plot the location of leaks repaired due to other than corrosion.

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Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-14-27 Refer to the Company's response to AG-2-16(a), p. 12 of 34. Will a sample of an unprotected steel pipe shows signs of corrosion before the corrosion develops into a detectable leak? If "yes", explain how the Company failed to monitor its samples of unprotected steel pipe and develop a replacement schedule based on the results of pipe sample testing.

Response: Unprotected steel pipe will show signs of corrosion prior to leaking at the leak site. However the company is unaware of any devices or methodologies to predict specific leak sites prior to leaking.

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Responsible: Danny G. Cote, General Manager

- AG-14-31 Refer to the Company's response to AG-2-16(a), p. 28 of 34. Does the BSG leak detection system consider changes in corrosion rates as indicated by pipe sample testing? If "yes", explain how in complete detail.
- Response: No, the BSG leak detection system does not employ pipe sample testing as part of its leak detection process. BSG performs regular system surveys to identify and categorize the severity of all leaks. Bay State's surveys exceed both regulatory requirements and typical industry practice and have allowed it to continually operate an effective and efficient system.

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Date: June 22, 2005

Responsible: John E. Skirtich, Consultant (Revenue Requirements)

AG-15-2 Identify on a class by class basis, the frequency in which Bay State reads its customer's meters.

Response: Bay State does not track meter read data by customer class. Meter read data is tracked by meter reading source. Meter read frequency is determined by meter reading source. Meter read source statistics for the period ended April 2005 are detailed in Table AG-15-2.

Table AG-15-2

Meter Read Source	Number of Meters	Meter Read Frequency
Automated Meter Reading- Radio Frequency (Itron)	278,160	AMR devices are read monthly
Automated Meter Reading- Telephone Based (Metscan)	2,266	AMR devices are programmed to call in once each month.
Automated Meter Reading- Daily Read Telephone Based	233	AMR devices are programmed to call in once each day.
Manual Meter Read	6,664	Routes are established based on customer load. Large volume meters are read each month. All other meters are read every other month. This group also includes meters that are pending AMR installation.

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Date: June 22, 2005

Responsible: John E. Skirtich, Consultant (Revenue Requirements)

- AG-15-4 Identify the following:
- a. the number of Metscan meter reading devices in use and associated impact these devices have on calculating the billing lag and/or meter reading lag.
 - b. the number of Itron meter reading devices in use and the associated impact these devices have on calculating the billing lag and/or meter reading lag.
 - c. the overall impact that the change from Metscan to Itron technology will have on the billing service lag.

Response:

- A. As of April 2005, the number of Metscan devices transmitting a monthly meter reading is 2,266. Metscan devices are programmed to call-in during the 2-3 day read period (meter read window) established by the Customer Information System (CIS). Reads received from Metscan devices are sent to the CIS nightly and processed for consumption to determine if the read is appropriate. Meter reads accepted by the CIS are billed the same night.

In the event the CIS determines that a read were outside the parameters, a billing exception is generated. Billing exceptions are worked on a cycle basis and may result in a 1-3 day lag in the generation of a bill.

- B. As of April 2005, the number of Itron AMR devices is 278,160. Itron devices are read during a 2-3 day read period (meter read window). Reads received from Itron ERT devices are sent to the CIS within the 2-3 day read period. Most reads are posted to the CIS on a same day basis. The exception process and potential billing lag process for Itron reads is the same as Metscan reads.
- C. The Customer Information System parameters and rules that determine if an actual meter read will be used for billing on the date received, or held for further review, are the same for both Metscan and Itron AMR technology.

The transition from Metscan to Itron AMR has no impact on the billing service lag process. However, reads received from the Itron AMR

devices result in fewer billing exceptions. Therefore, a greater percentage of Itron AMR reads will bill on the first night of the billing window.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO THE
SEVENTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: John E. Skirtich, Consultant (Revenue Requirements)

AG-17-9 Referring to Exhibit BSG/JES-1, Schedule JES-6, Page 18, please provide supporting documentation or workpapers for the adjustment on Line 1.

Response: Table AG-17-9 below lists by month the level of bad debt expense collected via the CGA. The source of the data is the 2005 Off-Peak CGA, Section 15-Reconciliation Filing, Section 8-Bad Debt Reconciliation, Page 1, Column 8, Rows 1 through 4. The total amount collected was \$5,396,100 of which \$105,965 related to recovery of interest and working capital. The total amount recorded to bad debt expense equals \$5,290,135.

Table AG-17-9

January 2004	723,101
February 2004	811,813
Mar-04	575,249
Apr-04	475,721
May-04	246,713
Jun-04	241,481
Jul-04	176,472
Aug-04	162,027
Sep-04	166,548
Oct-04	248,819
Nov-04	579,773
Dec-04	988,383
Total Bad Debt Collections:	5,396,100
Less: Portion of recovery related to interest and working capital:	(105,965)
Total	5,290,135

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D. T. E. 05-27

Date: June 22, 2005

Responsible: John E. Skirtich, Consultant (Revenue Requirements)

AG-17-13 Referring to Exhibit BSG/JES-1, Schedule JES-17, Page 3, please provide the same information for 1999 and 2004.

Response: Please see Table AG-17-13, which updates Exhibit BSG/JES-1, Schedule JES-17, and Page 3 for the years 1999 and 2004.

TABLE AG-17-13

<u>Description</u>	<u>1999</u> <u>(\$)</u>	<u>2000</u> <u>(\$)</u>	<u>2001</u> <u>(\$)</u>	<u>2002</u> <u>(\$)</u>	<u>2003</u> <u>(\$)</u>	<u>2004</u> <u>(\$)</u>
<u>Bare Steel Replacement Costs</u>						
Mains	4,633,981	1,683,647	3,555,845	2,533,660	3,161,644	4,688,027
Services	889,007	744,544	1,324,186	1,077,621	1,186,583	1,259,116
Other Additions	<u>175,555</u>	<u>130,265</u>	<u>292,982</u>	<u>224,915</u>	<u>249,083</u>	<u>272,071</u>
Total Cost	5,698,543	2,558,456	5,173,013	3,836,196	4,597,310	6,219,214

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Date: June 22, 2005

Responsible: John E. Skirtich, Consultant (Revenue Requirements)

AG-17-14 Referring to Exhibit BSG/JES-1, Schedule JES-17, Page 3, please explain the discrepancy between the amounts on Line 1 and the amounts for the years 2000 – 2003 in the response to AG-2-34.

Response: There are two reasons for the difference in amounts provided in BSG/JES-1, Schedule JES 17, Page 3, Line 1 and the response to AG-2-34.

First the data for AG-2-34 was fully loaded with overheads, whereas the amounts provided in JES-17 were direct costs without overheads. Second, the data for AG-2-34 was for bare steel only, whereas the amounts provided in JES 17 were a combination of bare steel and unprotected coated steel.

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D. T. E. 05-27

Date: June 22, 2005

Responsible: John E. Skirtich, Consultant (Revenue Requirements)

AG-17-15 Referring to Exhibit BSG/JES-1, Schedule JES-17, Page 3, please explain the discrepancy between the amounts on Line 2 and the amounts for the years 2000 – 2003 in the response to AG-2-36.

Response: There are two reasons for the difference in amounts provided in BSG/JES-1, Schedule JES 17, Page 3, Line 2 and the response to AG-2-36.

First the data for AG-2-36 was fully loaded with overheads, whereas the amounts provided in JES-17 were direct costs without overheads. Second, the data for AG-2-36 was for bare steel only, whereas the amounts provided in JES 17 were a combination of bare steel and unprotected coated steel.

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RESPONSE OF BAY STATE GAS COMPANY TO THE
SEVENTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: John E. Skirtich, Consultant (Revenue Requirements)

AG-17-16 Referring to Exhibit BSG/JES-1, Schedule JES-17, Page 6, please
explain why there is no adjustment to eliminate depreciation on retired
[sic].

Response: Please see Bay State's response to DTE-1-27.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO THE
SEVENTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: John E. Skirtich, Consultant (Revenue Requirements)

AG-17-17 Referring to Exhibit BSG/JES-1, Schedule JES-17, Page 1, Line 8, please explain why the "Carrying Costs – In Service to Rate Implementation" is treated as an element of annually recurring revenue requirements.

Response: During the Steel Infrastructure Replacement ("SIR") period, Bay State will continually have non-revenue producing plant completed and in service well before it is included in rates. Allowance for funds used during construction is discontinued once the plant is placed in service. By including the carrying costs in the SIR base rate adjustment gives the company an opportunity to recover the carrying costs incurred from in service to rate implementation. Furthermore, by including it as a separate item, allows the amount to be adjusted based each year's level and timing of the expenditures that are placed in service before rate implementation. Once the program is completed, the amount will drop out of the calculation. Please refer to Bay State's response to DTE-01-26.

COMMONWEALTH OF MASSACHUSETTS
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RESPONSE OF BAY STATE GAS COMPANY TO THE
EIGHTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-18-1 Please provide a complete and detailed description of the Gas Technology Institute's Operations Technology Development ("OTD") program. Include when the program began, the OTD's total annual budget since the program began, all of the OTD program participants and the annual fees and any other contributions they pay to be participants, a complete list of all the projects OTD is currently undertaking and how much each project has cost to date or is estimated to cost.

Response: A complete and detailed description of the Operations Technology Development (OTD) Program can be found in the OTD Prospectus attached hereto as AG-18-01 Attachment A.

The OTD Program was initiated in June 2003. The OTD annual budget varies by the number and size of the participating utilities. The annual budget ranges from approximately \$6M to \$7M annually. Please reference OTD Prospectus attached hereto as AG-18-01 Attachment A for additional details relative to annual fees and contributions.

A complete list of all OTD projects with estimated costs is attached hereto in spreadsheet format as AG-18-01 Attachment B.

Current OTD participants include:

- ALAGASCO
- PUBLIC SERVICE ELECTRIC AND GAS
- CONSOLIDATED EDISON CO. OF NEW YORK
- NEW YORK STATE ELECTRIC & GAS/ROCHESTER GAS & ELECTRIC
- QUESTAR GAS
- TECO PEOPLES
- NATIONAL FUEL GAS DISTRIBUTION
- KEYSPAN
- AMERICAN PUBLIC GAS ASSOC. RESEARCH FOUNDATION
- COLORADO SPRINGS UTILITY
- SOUTHERN CALIFORNIA GAS
- NW NATURAL GAS
- ATMOS ENERGY
- MEMPHIS LIGHT GAS & WATER
- NICOR GAS
- NISOURCE



Offering - Operations Technology Development

An LDC Partnership Program

For many years, natural gas local distribution companies (LDCs), both public and investor owned, have recognized the value of supporting technology developments for their customers and their own infrastructure. Industry-supported technological advances have provided improvements in the quality of service, reduced costs, greater efficiency, enhanced safety, and considerable environmental benefits. LDCs have also recognized the importance of leveraging their investments with others who have similar interests to minimize the risks and improve the potential for success. Given this need, LDCs are pursuing funding alternatives to support critical technology developments.

One of these alternatives was to create an entity where utilities come together as partners to jointly fund potential technology development solutions to common issues. The concept is not new. Gas Technology Institute (GTI) developed and evolved a program called the Sustaining Membership Program (SMP) that allows utilities to partner and decide which projects best address their mid- to longer-term needs. The SMP has two decision-making bodies comprised of utility representatives: an executive committee that focuses on strategic issues, and a technical committee that makes decisions on which projects to fund.

With GTI's history, management capabilities, and technology development expertise, a group of LDCs approached GTI in 2002 to work with them on further developing the concept.

The primary areas to focus on were Gas Operations, End Use, and Environmental Science. Gas Operations was identified as the first area to address.

Under the partnership program, Operations Technology Development (OTD) was created, similar in structure to the SMP. After several individual meetings and two group meetings with LDCs, GTI initiated, on behalf of a select group of utilities, a not-for-profit Illinois company called Operations Technology Development, NFP, in June 2003.

The scope of the OTD program includes mid- to near-term technology developments. Each OTD member nominated an individual from their company to serve on the Board of Directors and an individual to serve on the Technical Project Committee. The participants vote with their funds by choosing which projects best address their customers' and utility operations' needs.

BACKGROUND AND LDC NEEDS

LDCs have traditionally placed great importance on the safety and reliability of the operation of the gas distribution network. Throughout the United States, LDCs provide natural gas service to over 50 million residential, commercial, and industrial customers. These end users receive safe, reliable gas service through the focused efforts of the gas company, and through the use of new technologies that enhance field operations.

The development and implementation of new technology for gas industry field operations, whether new tools, equipment, processes, or procedures, has allowed the industry to continually improve operations while reducing operating costs. Since 1995, the gas industry has reduced its annual costs for operations and maintenance from \$3.2 billion to \$2.8 billion. Although significant, additional development and implementation of new technology can further enhance these savings while having a positive impact on safety, operating efficiency, labor requirements, reliability, and integrity.

Today, LDCs continue to support the need to develop technology solutions for the natural gas industry and the gas consumer, but place a stronger emphasis on working collaboratively. This is especially apparent in the distribution operations area. There are numerous benefits to working collaboratively to develop technology solutions for LDCs including: the leveraging of funds (no single LDC is responsible to carry the entire financial burden); the ability to gain the interest of a commercializer based on broad industry support; and

using input from numerous expert sources that result in a stronger solution. There is also a significant benefit to working collaboratively on programs or projects that can impact regulatory issues, such as pipeline integrity management.

OPERATIONS TECHNOLOGY DEVELOPMENT PROGRAM OVERVIEW

Operations Technology Development (OTD) develops, tests, and implements new technology, providing solutions to a wide range of issues relating to gas operations and its infrastructure. It is designed to provide new tools, equipment, software, processes, or procedures that will enhance safety, increase operating efficiency, reduce operating costs, and help maintain system reliability and integrity.

PROGRAM SIZE AND SCOPE

The program seeks the long-term participation of 15 to 25 LDCs. The cost of participating in OTD is between \$250,000 and \$750,000 per company per year. The number of customers, at 50 cents per customer, determines the funding level for each participant. Each participating company votes with their funds when selecting projects of interest. In the case where companies fall significantly below the \$250,000 range, aggregation can be an option providing it adheres to a set of guidelines approved by the OTD Board. For example, the APGA Research Foundation aggregates the financial resources of its members and participates in OTD as a single company.

The minimum amount determined to sustain a viable gas operations technology development program today is approximately \$15 million/year. The goal of OTD is to secure \$10 million/year from the LDCs and leverage the funds with other organizations.

The OTD program focuses its technology development efforts on distribution and transmission activities identified by the members. The RD&D program includes a mix of short-term (less than 3 years) quick-response research, engineering, or testing activities; and mid- to longer-term research projects (3-7 years to implementation). The current OTD projects are divided into the following six project categories:

- Pipe and Leak Location
- Pipe Materials, Repair and Rehabilitation
- Excavation and Site Restoration

- Pipeline Integrity Management and Automation
- Operations Infrastructure Support
- Environmental Science and Forensic Chemistry

OTD GOVERNANCE

The overall structure of this LDC partnership program is shown in Figure 1. OTD retains the assets of the Partnership. This includes the cash assets of the technology development budget and any intellectual property.

LDC Partnership Structure for Operations

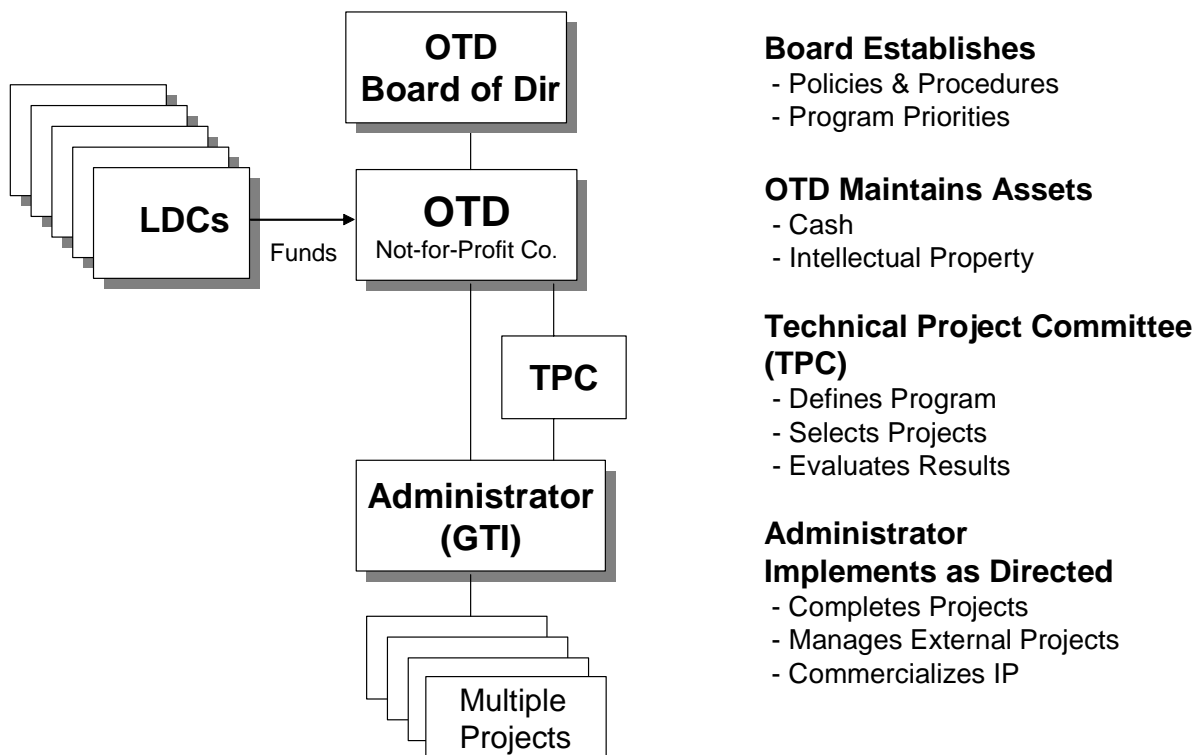


FIGURE 1

OTD is a not-for-profit corporation, although it does not have any employees. GTI has contracted with OTD as the Administrator to perform and complete projects; manage projects external to GTI; and work with the appropriate commercialization partner to introduce the product into the marketplace. GTI also utilizes its staff and resources to provide support in contract administration, financial accounting, and management of the new technology program.

The OTD Board of Directors consists of one member from each participating company. The Board establishes the policy and procedures that governs the operation and conduct of the partnership, provides strategic guidance on program priorities, and sets long-term goals and objectives.

A Technical Project Committee (TPC) is comprised of representatives from the participating companies who are knowledgeable in gas industry operations and the challenges and problems they face. The TPC identifies the overall operational issues to be addressed in the program, and the specific topics that will be the focus of individual research projects. GTI, working with TPC members, identifies research and technology development options with potential for providing solutions to the problems being addressed. The TPC reviews the progress of individual projects and provides direction on project continuations, terminations, and initiations. TPC members are also the main conduit for disseminating the results and deliverables from the program into their companies. This committee meets two or three times per year, and seeks to schedule meetings in coordination with other scheduled meetings of interest to the gas industry to limit travel and related expenses.

GTI functions as a provider of research and technology development services, the OTD Program Manager, and a manager of work conducted by others to address the identified problems. GTI's role in a given development effort is determined by the project participants and by the requirements of the project.

PROJECT FUNDING

A participating LDC has the option to fund or not fund an individual project. The program operates on a "customer choice" basis, with each member investing in the projects they wish to fund. Once participating companies elect to move a project forward, and the scope of work is finalized, the project participants may elect to seek additional project cofunders outside of the

Partnership. Cofunders solicited may include federal and state government agencies, and product manufacturers/developers.

FUNDING PROCEDURE

Companies participating in the OTD program can provide their funding through one of two arrangements. A company may place their full amount of funding for a year or longer in a “hold account.” Alternatively, a participating company may elect to receive periodic invoices for their participation. Payments received will be deposited into their hold account. Participants will draw down funds from their hold account and apply them to selected projects.

Funds received by OTD from a member are held in trust by OTD until the member representative directs OTD to allocate a specific dollar amount to a specific OTD project. Until allocation notice is received by OTD, a company’s funds remain under the full direction and control of the participating utility. Unallocated funds remain the property of the OTD utility participant until allocated, at which time they will be transferred to OTD to support new technology development as directed by the company representative.

ADDITIONAL INFORMATION

If you would like additional information on OTD, please contact your GTI Strategic Account Manager or the OTD Program Administrator, Ron Snedic.

Mr. Ron Snedic
Phone: 847/768-0572
FAX: 847/919-6828
Email: ron.snedic@gastechnology.org

Gas Technology Institute
1700 South Mount Prospect Road
Des Plaines, IL 60018

AG-18-01 Attachment B
Operations Technology Development (OTD) Projects

	<i>Project Cost (\$000)</i>	<i>Duration (months)</i>
(1) Pipe and Leak Location	5,924	
(1.a) Underground Facility Pinpointing	725	27
(1.c) Miniature Ethane/Methane Detector (EMD) for Leak Survey	893	24
(1.h) Hand-held Acoustic Pipe Detector	777	24
(1.i) Remote Leak Survey Using Laser	465	24
(1.j) Integration of Electromagnetic and Acoustic Obstacle Detection Systems for UCO	880	27
(1.k) Commercialization of an Obstacle Detection System Using GPR	651	24
(1.cc) Buried Pipe Imaging by Capacitive Tomography	633	26
(1.ee) Portable Methane Detector (PMD) Improvements and Field Evaluations	900	24
(2) Pipe Materials, Repair, and Rehabilitation	4,657	
(2.b) Service Applied Main Stopper	675	30
(2.f) Safe, Reliable Operation and Maintenance of Aldyl-ATM Plastic Gas Pipe Systems	500	24
(2.cc) High Pressure Plastic Pipe Materials	350	27
(2.dd) Flaw Acceptance Criteria & Repair Options for Low Stress Natural Gas Pipelines	400	24
(2.ee) Non-Interrupted Meter Change Out Kit	804	30
(2.ff) Evaluation for Impact of "Rework"	600	27
(2.gg) No-Blow High Pressure Service Replacement Device Development and Deployment	250	25
(2.ii) Deployment of No-Dig Reconnect Method for PE Inserts	164	38
(2.jj) Increase in Design Factor - Phase I & II	414	29
(2.5.a) Continued Development of Inflatable By-Pass Stopper and Repair	125	12
(2.5.b) 50 to 70 Year Maintenance-Free Pipeline Coatings for Critical Locations	375	24
(3) Excavation and Site Restoration	2,944	
(3.c) Alternative Methods for Pavement Cutting	300	36/18
(3.e) Micro-Excavation System Applications	750	24
(3.aa) Evaluation of Flowable Fill Around Buried Pipes	653	30
(3.cc) Development of a Lightweight, Portable Shoring System	291	24
(3.dd) Development/Enhancement of Trenchless Service Installation Through Keyholes	500	30
(3.ee) Modification of Soil Compaction Measuring Devices for Utility Implementation	450	27
(4) Pipeline Integrity Management and Automation	2,712	
(4.b) Reduce Mandated Inspection Costs by Remote Field Eddy Current Inspection of Unpiggable Pipelines	600	36
(4.c) Detection of Unauthorized Construction Equipment in Pipeline Right-of-Ways	160	33/12
(4.e) Inspection Platforms for Unpiggable Pipelines (NY Gas)	615	36
(4.g) Global Positioning System for Operation and Maintenance Tracking Database	46	24
(4.aa) Reducing Riser/Meter Set Corrosion to Lower Lifecycle Cost	350	24
(4.ee) Broadband Electromagnetic Technology - Sensor to Measure Wall Thickness	365	26
(4.5.a) Camera Inspections on Live Mains thru Keyholes	276	25
(4.5.d) Monitor Internal Corrosion Using Fluidized Sensors	300	24
(5) Operations Infrastructure Support	765	
(5.a) Develop a CD-Based Learning Module to Educate Fire and Police on Natural Gas Emergencies	175	24
(5.c) Foreign Technology Transfer	80	24
(5.d) SIMGAS	265	30
(5.e) Support for OTD Technology Transfer	45	24
(5.5.a) Improving Crew Truck and Equipment Productivity	200	25
(6) Other		
2003 SMP		
2004 SMP		
2005 SMP		
(7) Environmental Science and Forensic Chemistry	384	
(7.5.a) Developing and Demonstrating Rapid Quantitative PCB Analysis in the Field	384	24

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RESPONSE OF BAY STATE GAS COMPANY TO THE
EIGHTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-18-2 Please provide a complete and detailed description of the Gas Technology Institute's Environmental Issues Consortium ("EIC") program. Include when the program began, the EIC's total annual budget since the program began, all of EIC's program participants and the annual fees and other contributions they pay to be participants, a complete list of all the projects EIC is currently undertaking and how much each project has cost to date or is estimated to cost.

Response: The Environmental Issues Consortium (EIC) is a voluntarily funded collaborative R&D program for gas utilities interested in the development of technology-based solutions to pressing environmental issues. The purpose of the EIC is to identify, discuss and perform collaborative research programs designed to meet the environmental needs of the natural gas industry. The EIC program looks to address environmental issues such as:

- Rapid field testing techniques for PCB detection
- Pipeline integrity programs
- Sediments management programs
- Greenhouse gas inventory techniques and
- Advanced chemical forensic technique development

The Gas Technology Institute is the administrator for the EIC program. Projects are managed and/or performed by GTI's Environmental Science and Forensic Chemistry Group. Participation in this program is on a project-by-project basis, based on the individual needs of the utility and its ratepayers. The EIC program is collaborative in nature; therefore the results, findings and costs are shared amongst project participants.

The EIC program was initiated by GTI in 2004 at which point natural gas industry personnel developed ideas and concepts in a collaborative nature. The scopes of work for EIC projects were developed during the third and fourth quarters of 2004 and continuing into 2005, with a priority being placed on those of highest importance to the industry. The current slate of EIC projects and projected costs under consideration by the natural gas industry include:

- Hydrocarbon Degradation Products in Sedimentary Environments (\$360,000)

- Developing Rapid Quantitative PCB Analysis in the Field (\$384,000)
- Implications of the PCB Mega Rule on Natural Gas T&D (\$300,000)
- Sources of Indoor Air VOCs near Former MGP Sites (\$306,000)
- Linking MGP Fuels to MGP By-Products with Stable C and H2 Isotopes (\$340,000)
- External Corrosion Survey of Natural Gas Pipelines (Per sample basis)
- Internal Corrosion Survey of Natural Gas Pipelines (Per sample basis)
- Effect of Petroleum-Based Hydrocarbons on PE Structural Integrity (\$350,000)
- Joint GTI/EPRI Sediments Research Project (\$1,500,000)
- "Black Powder" Contamination: Survey and Best Practices Manual (\$60,000)

From this proposed slate of projects, thus far the Developing Rapid Quantitative PCB Analysis in the Field project has been launched and the Sources of Indoor Air VOCs near Former MGP Sites, Linking MGP Fuels to MGP By-Products with Stable C and H2 Isotopes and the Internal Corrosion Survey of Natural Gas Pipelines projects are expected to be launched in the near future.

The EIC program operates on a project-by-project basis meaning that participants choose to participate in only those projects that benefit the utility and their ratepayers. There is no pre-determined annual participation level. Project participation fees are dependent on the overall cost of the project and the number of participants. The collaborative nature of this program reduces the overall cost to each participant had they sought to develop the technology independently.

Current EIC project participants include:

- Consolidated Edison Co. of New York
- New York State Electric & Gas/Rochester Gas & Electric
- National Fuel Gas Distribution
- KeySpan
- American Public Gas Assoc. Research Foundation

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RESPONSE OF BAY STATE GAS COMPANY TO THE
EIGHTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-18-3 Please refer to Exhibit BSG/DGC-1, page 59. For each of the four OTD projects, please provide the following information:

- (1) a complete and detailed description of the nature and purpose of the project along with the expected outcome;
- (2) the total originally estimated cost of the project;
- (3) the total cost of the project to date;
- (4) the current estimated cost of the project;
- (5) expected patents and patent revenues, copyrights and royalties;
and
- (6) the current annual cost of the project.

Response: A complete and detailed description of the nature and purpose of the designated projects along with the expected outcomes can be found in the attached project offerings as follows:

- Remote Laser Leak Survey: Attachment AG-18-03 (A)
- Non-Interruptible Meter Change-Out Kits: Attachment AG-18-03 (B)
- Alternative Methods to Pavement Cutting: Attachment AG-18-03 (C)
- Improving Crew Truck and Equipment Productivity: Attachment AG-18-03 (D)

Project cost data can be found in Attachment AG-18-01 (B) as well as in the business case and statement of work attachments listed above.

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EIGHTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-18-4 Please provide NiSource's total contribution to GTI, the OTD and EIC programs, along with the amounts assigned / allocated to each of its subsidiaries.

Response: Beginning in 1976, research and development activities for the natural gas industry were conducted under the auspices of the Gas Research Institute (predecessor organization to GTI). This program was funded by end-users of natural gas via a Federal Energy Regulatory Commission (FERC) authorized collection mechanism.

In April 1998, FERC approved a Settlement for GRI that provided for a transition to voluntary funding of research and development (R&D) programs. The Settlement agreement gradually decreased the FERC collection mechanism during the period of 1999 through 2004, with the complete phase out of the FERC-approved research funding mechanism in 2004.

Under a separate Settlement Agreement with the East Coast Distributors (ECD), of which Bay State was included, Bay State Gas had control over a portion of the above-mentioned FERC R&D Program funding during the period of 1999 - 2004. These dollars were directed and controlled by Bay State and, as such, are considered "voluntary R&D funding". This constituted the entire funding of GTI by Bay State. There were no additional costs allocated by NiSource to Bay State for any NiSource funding for GTI programs. Bay State directed its ECD funds into the following GTI projects/programs:

Bay State Gas ECD Project/Program	Year	\$
New England Fund	1999	469,992
New England Fund	2000	331,039
Operator Qualification Tech. Transfer	2001	175,000
Keyhole Technology Workshop	2001	2,000
Technician/Inside Sales Tech. Transfer	2001	50,000
Sustaining Membership Program	2002	100,000
Sustaining Membership Program	2003	100,000
Sustaining Membership Program	2004	100,000
Non-piggable Pipelines	2004	97,204
Operations Technology Development	2004	248,212

Total ECD Funding:		1,673,447
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Research dollars contributed by NiSource *subsidiaries to GTI or OTD programs are as follows:

Project/Program	Company	Year	\$
Global Tech. Transfer	NIPSCO	2001	20,000
Research Collaboration Program	NIPSCO	2002	110,791
Sustaining Membership Program	NIPSCO	2002	50,000
MGP Benchmarking	NIPSCO	2003	35,000
Pipeline Integrity Phase II	NIPSCO	2003	10,000
Pipeline Integrity Phase III	NIPSCO	2003	10,000
Ergonomics Project	NIPSCO	2003	24,000
Operations Technology Development (OTD)	Columbia Gas of Kentucky	2003	125,000
Operations Technology Development (OTD)	Columbia Gas of Kentucky	2004	300,000
Operations Technology Development (OTD)	Columbia Gas of Kentucky	2005	300,000
Total:			984,791

* None of these NiSource funds were allocated to Bay State.

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DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO THE
EIGHTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-18-5 Please itemize and quantify GTI's Royalties and Patent Rights Revenues paid to NiSource.

Response: There have been no royalties and/or patent revenues paid to NiSource from GTI or OTD. NiSource participates in the OTD Program and GTI's Sustaining Membership Program (SMP). Royalties and/or patent revenues are owned by the OTD Corporation and handled as directed by the OTD Board of Directors. Royalties and/or patent revenues from the SMP program are reinvested back into the SMP research program. The intent of these programs is to generate cost reductions, efficiency improvements, and safety enhancements as well as to improve the integrity of the natural gas distribution system rather than the generation of revenues.

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RESPONSE OF BAY STATE GAS COMPANY TO THE
EIGHTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Danny G. Cote, General Manager

AG-18-6 Please provide a complete and detailed description of the fee paying members rights and privileges to GTI's Royalties and Patent Rights.

Response: Under GTI's Sustaining Membership Program (SMP), royalties and/or patent revenues from the SMP program are reinvested back into the SMP research program, thereby further leveraging the research investments of participating utilities.

Under the Operations Technology Development (OTD) Program, royalties and/or patent revenues are owned by the OTD Corporation and disbursed as directed by the OTD Board of Directors. Revenue disbursement options include reinvestment in research projects as well as royalty payments to member companies. All members of the OTD, including NiSource, have one representative on the OTD Board of Directors.

For additional discussion, please reference Bay State's response to AG-18-5 as well as the OTD Prospectus, included as Attachment AG-18-01(A).

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RESPONSE OF BAY STATE GAS COMPANY TO THE
EIGHTEENTH SET OF INFORMATION REQUESTS FROM ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Stephen H. Bryant, President

AG-18-9 Please describe any and all efforts the Company has undertaken to educate the public about reporting gas leaks. Please provide copies of any and all documents, including but not limited to, mailings and bill stuffers, the Company uses to communicate with the public.

Response: The Company utilizes a variety of media methods to educate its customers in the matter of how to recognize and react to a gas emergency.

Attachment AG-18-09 (a) is a "Scratch 'n Sniff" bill insert. A "Scratch 'n Sniff" bill insert is included with all customer bills annually.

Attachment AG-18-09 (b) is a "Scratch 'n Sniff" insert translated into Spanish. Copies of the Spanish version were distributed to local public offices throughout our service territory.

Attachment AG-18-09 (c) is a copy of a Gas Leak Flyer that specifically addresses gas leak emergencies. Copies of this flyer were delivered to the Fire Departments in our territories.

Attachment AG-18-09 (d) is a door hanger utilized when excavation is required for system improvements. A copy of this notice is hung on a door of each premise that will be affected by our work.

Attachment AG-19-09 (e) is a brochure that provides answers to questions about natural gas and instructions on steps to be taken if a gas leak is detected and is also distributed with the door hanger utilized above.

Attachment AG-18-09 (f) is a press release. Safety messages are incorporated into many of our Dig Safe efforts, communications, press releases and quarterly newsletter articles.

Attachment AG-18-09 (g) is a quarterly newsletter that incorporated a gas odor detection awareness message.

Attachment AG-18-09 (h) is a Dig Safe Poster. Dig Safe Posters were delivered to police and fire departments, excavators, contractors and public works departments. In addition, considerable effort and resources

are made available to provide training sessions to help educate public servants on what to do in the event of a natural gas incident.

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RESPONSE OF BAY STATE GAS COMPANY TO THE
THIRD SET OF INFORMATION REQUESTS FROM THE ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: John E. Skirtich, Consultant (Revenue Requirements)

AG-19-3 Referring to the Company's response to Information Request AG-1-22, please indicate the amount of pro forma property taxes shown on Exhibit BSG/JES-1, Schedule JES-9, page 2, line 1 that were allocated to those properties.

Response: Please see Bay State's responses to DTE-1-5 and AG-11-9.

COMMONWEALTH OF MASSACHUSETTS
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RESPONSE OF BAY STATE GAS COMPANY TO THE
TWENTIETH SET OF INFORMATION REQUESTS FROM THE ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Paul R. Moul, Consultant (ROE)

AG-20-2 Referring to Mr. Moul's Gas Group of five companies, please indicate which of those companies have gas distribution operations which have gas supply cost reconciliation clauses.

Response: Mr. Moul understands that for the most part, all companies included in Mr. Moul's Gas Group have reconcilable purchased gas clauses. There is no purchased gas clause in effect for Atlanta Gas Light (subsidiary of AGL Resources) because it derives its revenues from fixed charges that are not volumetrically based and contain no commodity charges. Other AGL subsidiaries have recoverable purchased gas clauses. Both New Jersey Natural Gas (a subsidiary of New Jersey Resources) and South Jersey Gas (subsidiary of South Jersey Industries) have a Basic Gas Supply Service ("BGSS") clause that provides reconciled recovery of gas costs. Piedmont Natural Gas has purchased gas adjustment procedures in effect in all its jurisdictions. Washington Gas Light (a subsidiary of WGL Holdings) has gas cost recovery mechanisms that are reconcilable in each of its jurisdictions.

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RESPONSE OF BAY STATE GAS COMPANY TO THE
TWENTIETH SET OF INFORMATION REQUESTS FROM THE ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Paul R. Moul, Consultant (ROE)

AG-20-3 Referring to Mr. Moul's Gas Group of five companies, please indicate which of those companies have gas distribution operations which have pension and / or post-retirement benefits other than pension cost reconciliation clauses.

Response: Generally speaking, the companies included in Mr. Moul's Gas Group do not have reconciliation mechanisms for pension costs. There are some deviations from this generalization that include: subsidiaries of AGL Resources, New Jersey Natural Gas (a subsidiary of New Jersey Resources), and South Jersey Gas (a subsidiary of South Jersey Industries) that have approved phase-in deferral plans for postretirement benefits, other than pensions (i.e., regulatory approved recovery of deferred FAS 106 costs that are being recovered over various periods up to 15 years). Piedmont Natural Gas utilizes a number of accounting mechanisms that reduce the volatility of its reported pension costs. Washington Gas Light (a subsidiary of WGL Holdings) has a regulatory deferral mechanism that is designed to ensure that variations in annual pension costs do not affect income. That is to say, the District of Columbia jurisdiction of Washington Gas Light has a tracking mechanism that permits the deferral of pension cost variations until base rates are reset.

The lack of a pension reconciliation mechanism in the other jurisdictions for the Gas Group companies does not have the same impact on those companies, as it does for Bay State. These companies operate under traditional cost of service ratesetting that does not contain a five (5) year stayout, which is part of the PBR proposed by Bay State. Since these companies do not operate with such a stayout, they have the ability of dealing with the volatile cost of pensions and/or PBOP through traditional ratesetting. This situation is unlike PBR ratesetting for Bay State, which cannot accommodate significant variations in these costs, absent a reconciliation mechanism.

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RESPONSE OF BAY STATE GAS COMPANY TO THE
TWENTIETH SET OF INFORMATION REQUESTS FROM THE ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Paul R. Moul, Consultant (ROE)

AG-20-4 Referring to Mr. Moul's Gas Group of five companies, please indicate which of those companies have gas distribution operations which have bad debt expense reconciliation clauses.

Response: Generally speaking, financial reports and/or SEC filings for companies in the Gas Group do not contain a level of detail that would reveal this information. It was determined that Piedmont Natural Gas has a provision whereby the gas cost portion of its uncollectible accounts is recoverable through the PGA in its Tennessee jurisdiction. For New Jersey Natural Gas (a subsidiary of New Jersey Resources) and South Jersey Gas (a subsidiary of South Jersey Industries), these companies have a Societal Benefits Clause ("SBC"). The SBC recovers costs related to BPU-mandated programs, including environmental remediation costs recovered through RAC; energy efficiency and renewable energy program costs recovered through New Jersey Clean Energy Programs; consumer education program costs; and low income program costs recovered through the Universal Service Fund. No further conclusions can be drawn from this response concerning silence on this issue for the other Gas Group companies. Indeed, lack of a discussion on this matter may reveal the relative significance assigned to this issue by these companies in the past.

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RESPONSE OF BAY STATE GAS COMPANY TO THE
TWENTIETH SET OF INFORMATION REQUESTS FROM THE ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Paul R. Moul, Consultant (ROE)

AG-20-6 Referring to Mr. Moul's Gas Group of five companies, please indicate which of those companies have gas distribution operations which have annual price cap increases subject to inflation and productivity similar to Bay State Gas Company's proposed price cap formula in this case.

Response: None. The Georgia PSC recently terminated the PBR plan for Atlanta Gas Light (a subsidiary of AGL Resources), however the plan that was terminated did not have provision for price changes during the effective period of the plan.

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RESPONSE OF BAY STATE GAS COMPANY TO THE
TWENTIETH SET OF INFORMATION REQUESTS FROM THE ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Paul R. Moul, Consultant (ROE)

AG-20-7 Referring to Mr. Moul's Gas Group of five companies, please indicate which of those companies have gas distribution operations which have manufactured gas plant remediation cost recovery clauses.

Response: Atlanta Gas Light (a subsidiary of AGL Resources) has an Environmental Response Costs ("ERC") recovery rider. Both New Jersey Natural Gas (a subsidiary of New Jersey Resources) and South Jersey Gas (a subsidiary of South Jersey Industries) have riders to recover the cost for environmental remediation of manufactured gas plants. Piedmont Natural Gas has regulatory approval to utilize deferred accounting for environmental costs and is being amortized as they are recovered in rates. Washington Gas Light (a subsidiary of WGL Holding) has revenue recovery of environmental cost ranging from three to thirty years, with deferrals available between rate cases.

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RESPONSE OF BAY STATE GAS COMPANY TO THE
TWENTIETH SET OF INFORMATION REQUESTS FROM THE ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Paul R. Moul, Consultant (ROE)

- AG-20-8 Referring to Mr. Moul's Gas Group of five companies, please indicate which of those companies have gas distribution operations which have rate provisions for the recovery of lost base revenues associated with conservation programs.
- Response: Generally speaking, financial reports and/or SEC filings for companies in the Gas Group do not contain a level of detail that would reveal this information. It was determined that with an SFV rate design provides revenues to Atlanta Gas Light (a subsidiary of AGL Revenues) that are not volumetrically based. Hence, changes in customers usage based on conservation programs, is not an issue for them. No further conclusions can be drawn from this response concerning silence on this issue for the other Gas Group companies. Indeed, lack of a discussion on this matter may reveal the relative significance assigned to this issue by these companies in the past.

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DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO THE
TWENTIETH SET OF INFORMATION REQUESTS FROM THE ATTORNEY GENERAL
D. T. E. 05-27

Date: June 22, 2005

Responsible: Paul R. Moul, Consultant (ROE)

AG-20-9 Referring to the response to Information Request AG-10-9, please provide a complete copy of the attachment referred to in that response which was not provided with the original response.

Response: Mr. Moul only relied upon the pages that were provided in the response to Information Request AG-10-9. To duplicate the entire SBBJ Yearbook (a copyrighted publication) would be unduly burdensome because the Yearbook is 359 pages in length.